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# AMERICAN STATISTICAL ASSOCIATION

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NEW SERIES, No. 124.

DECEMBER, 1918

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## OUR STATISTICS OF FOREIGN COMMERCE AND THE WAR.\*

BY CHAUNCEY DEPEW SNOW, *Assistant Chief of the Bureau of Foreign and Domestic Commerce.*

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It was a high commissioner of the British Government, visiting the States in 1917, who formulated the slogan that has been adopted by the statisticians and others using official trade statistics in war work in Washington. The distinguished foreign visitor had noted with deep interest the numerous somewhat contradictory announcements on the billboards, in the street cars, and in other advertising media to the effect that "ships will win the war," "food will win the war," "fuel will win the war," etc. His comment was that England had made the really vital discovery that statistics will win the war.

Just as it is a good thing that everybody in the Food Administration and people generally should appreciate the importance of food in winning the war, so is it of great moment that the statisticians should be intensely conscious, even excessively conscious, of the importance of statistics in winning the war. The statisticians in the statistical branches of war research in Washington were soon telling each other that "statistics will win the war." This idea permeated the ranks of all the economists and others in Washington using statistics, and was accepted by the compilers and clerks. The trained statisticians were not sufficient in number to do all the statistical work that was required in this process of winning the war by means of statistics. The universities were combed, and the leading business concerns were made subject to the draft for men to do statistical work. Economists and business executives were soon in the ranks in Washington doing statistical work. They soon adopted this slogan and in taking up any phase of their new

\* Paper read at the Annual Meeting at Richmond, 1918

line of work made it a point to start out with the statement that "statistics will win the war."

The catch phrase, which must be admitted as decidedly apt, does not particularly need apologists. Our war-time shipping program has come more and more to rest on a solid basis of tonnage statistics. Our export embargoes and even more our import embargoes have in part been based on calculation of tonnage that may be saved and diverted to more urgent traffic. We were slow in coming to the realization of the extent to which our shipping needs demanded that we change our organized industrial life—that we even give up entirely some customary raw materials for available or partly available substitute domestic raw materials. It was hard for our traders who had had their business connections exclusively with Java and India and other remote points to realize that they must henceforth draw their supplies of materials from Brazil or the West Indies, or other nearby points. It was something revolutionary in business. But it would save tonnage, and tonnage was necessary, and it was done; and put to it, the industries affected have found substitute commodities or substitute sources of supply and have managed to get along. Detailed statistical studies were the basis of this revolutionary change.

Similarly, if we had had detailed statistics of our inland commerce, we should not have felt the full severity of the shortage of freight cars at certain points and the congestion and subsequent embargoes. If we had known exactly the fuel requirements of New England and other great industrial, non-coal producing regions, the hardships of the winter of 1917-1918 could have been avoided. It is only very recently that the Department of Commerce, by statistical studies, has made known to the nation the tremendous increase in carrying efficiency that can be accomplished by a comparatively slight outlay on the Delaware and Chesapeake Canal, the Raritan Canal, and the Cape Cod Canal. It seems almost incredible, yet it is undoubted that at an expenditure on the Delaware and Chesapeake Canal of something like \$12,000,000 for work in a very favorable terrain with practically no obstacles, the

distance from Baltimore north and from Baltimore to Europe for heavy ocean traffic can be shortened 184 miles.

These are things which we now appreciate and the nation owes a debt of gratitude to these able statisticians and economists and business men who have driven these things home and put through, without hesitation, a program that has enabled us to take advantage of things which we ought to have known before but did not. "Statistics will win the war" is truly not hard to justify.

Trade statistics of the United States are in the main represented by the monthly publication, *Monthly Summary of Foreign Commerce*, and the annual publication, *Commerce and Navigation of the United States*. Our statistical classification of imports, probably more because of tradition than necessity or legal requirement, has pretty closely followed the United States customs tariff. The statistical classification of exports has been a growth of many years, on a somewhat anomalous basis of grouping and alphabetical arrangement. The statistical schedules have been further refined from year to year. There is a constant demand on the part of commercial interests, for refinement of classifications, so that the number and scope of the "All other, not specially provided for" classifications will be cut down. There has been no change in the system of statistical classification; change has been only in this matter of detail, with a tendency toward more specialization.

Next year before this association I expect the story can be told how the export and import classifications have been given a thorough overhauling, arranged on a scientific group basis, with more emphasis on quantity figures, and harmonized somewhat with other statistical classifications. There will also undoubtedly be a story to tell about the change from fiscal year to calendar year, and the change to a country grouping which is more in keeping with the known facts and accepted standards of commercial geography. Within the Bureau of Foreign and Domestic Commerce we have broken ground for all these changes, with the stimulus and very able assistance of some of the country's leading statisticians and commercial geographers,

doing war work on the staffs of the Shipping Board, War Trade Board, and War Industries Board.

Our export and import statistics, probably more than any other official statistics collected by the United States Government, are, even in normal times, in demand for government uses. They are for the guidance of Congress in preparing fiscal legislation and legislation bearing on international commercial relations. They are for the use of the Treasury Department and the Department of Commerce in carrying out their administrative functions in connection with the administration of the customs tariff, the navigation laws, etc. They are for the guidance of the Department of State and the Department of Commerce in working out international commercial programs. They are essential to the United States Tariff Commission. The Department of Agriculture and the Department of the Interior use them in determining the direction and effect of the promotive work entrusted to these departments in connection with the development of the natural resources of the United States. And of course, in war time the foreign trade statistics are an indispensable basis for the determination of policies and effects of the administration of the various war-time activities entrusted to such organizations as the War Trade Board, United States Shipping Board, the War Industries Board, the Food Administration, and the Fuel Administration.

There are two other classes of persons who are interested in the official trade statistics of our exports, imports, and tonnage: the business men, and the academic economists, statisticians and writers. The business man who uses the trade statistics is apt to go on the basis that the government collects trade statistics primarily for his benefit. The economists and statisticians are apt to assume that the government collects trade statistics in order to make possible the careful analysis of the progress of the country, to enable the student today to reconstruct the past or the student tomorrow to reconstruct the period in which we now live. Some overlook the fact that the government started collecting statistics of exports, imports and tonnage primarily for fiscal reasons, for the guidance of Congress and the ad-

ministrative branches of the government and that to this day that is probably the most important end which the statistics have served.

Trade statistics with us from the beginning have been on a utilitarian basis. In Germany where there has been more of the cult of statistics for the sake of statistics and statistics for the statisticians, this utilitarian standpoint has been somewhat obscured. During the war the printed discussions of some of the leading statisticians of Germany have opened up the old German moot questions of statistics to enable the historian, economist, and sociologist of a hundred years hence to reconstruct a precise picture of the furious age in which we are living. In the United States the statistics have been put to greatly increased use during the war, but with more workaday promptings.

In recent years in the United States our official trade statistics have come more and more to be used by our business men as a basis for their operations. I was told recently by an international operator in one of our most important bulk imports of raw materials, that his business month for month for a period of years has been based on the statistics published by our Department of Commerce, and that he has attributed his financial success to his statistical familiarity with the state of his market. The largest manufacturer of an important line of metal goods in the United States, who has for years carried on a nation-wide business, recently told me that his sales program and his advertising appropriations are blocked out unit for unit on the basis of the population statistics issued by our Bureau of the Census. He has recently gone extensively into the export trade, and has been making an effort to arrange his sales campaigns in foreign markets on a statistical basis—very hard to do, but possible. Today the American manufacturer and merchant makes his plans more and more in the light of trade statistics. In the Bureau of Foreign and Domestic Commerce in Washington there is an opportunity to watch this development and to see the increasing use of the trade statistics for dollars and cents purposes. This is true of the trade statistics of foreign countries as well as of trade statistics of the United

States. The whole movement in this direction has been quickened by indispensable wartime reference to trade statistics.

The *Monthly Summary* and the annual volume of *Commerce and Navigation*, supplemented since 1913 by the handy little manuals on "Trade of the United States with the World," taking up exports and imports, by countries, article by article, have well served the main demand for statistical information from the three groups that have been mentioned. The detailed statistics in *Commerce and Navigation*, and the *Trade of the United States with the World*, have been of chief use to Congress and the government offices. The *Monthly Summary* and *Trade of the United States with the World* have served the chief needs of the business men. The economists, statisticians and writers have of course required all the published statistics. The Chief of the Bureau of Foreign and Domestic Commerce makes annually a brief text review of the figures; the war brought out the need of further analysis, and the Department will henceforth publish more analytical comment.

In addition to the published statistics the Department of Commerce has at all times had to meet a demand for special compilations. The Ways and Means Committee of Congress has possibly been the best customer and the most severe taskmaster of the Department in this regard. The committee makes constant use of the official trade statistics, and requires detailed statistical analyses and combinations that could not be anticipated or provided for by general publication. These compilations have to be made specially, and the Department of Commerce has to meet this demand. Similarly the published statistics do not serve all the purposes required by the business men, and special compilation is required to serve business needs. The Bureau of Foreign and Domestic Commerce does such special compilation with reference to a number of the exports and imports of principal importance in American business. In addition many of the trade associations and trade papers have assigned special representatives who make these specialized compilations from the material available in the Bureau. The new problems of war trade and after-war trade have increased the demand for special compilations.

At the outbreak of the world war when we were cut off from trade with Germany we were probably more inconvenienced by the threatened lack of dyestuffs and chemicals than by any other one thing. The dyestuff industry of the United States was on a small scale. We had to have dyestuffs, and there was an opportunity for creating an American dyestuffs industry. The published statistics of the United States did not furnish any clue as to the quantities of individual dyestuffs required for the American market. There was nothing to guide the old and prospective dyestuff manufacturers as to the dyestuffs that were needed here. The nature of the individual dyestuffs was concealed by "All other, not specially provided for" clauses. Estimates, even by the men most intimately associated with the trade, were widely at variance.

The question arose how a statistical basis for the establishment of an American dyestuff industry could be reached. It was decided that the only way was to dig out the invoices of every shipment that had come into the United States in the year 1913, as a pre-war year, and copy the facts off the consular invoices. This was actually done—regarded then as a staggering job. The work was under the supervision of an eminent chemist and statistician who had a technical familiarity with the subject, and personal familiarity with the German dyestuff industry, and recognized standing as a writer on the subject. This statistical census of dyestuff imports has been an important factor in the establishment of the American dyestuff industry, which is already of such proportions as to amaze any one familiar with its status before the war.

The success of the dyestuff census brought a demand for the continuation of the study to all other chemicals. In order that our Department of Agriculture and Geological Survey and our chemical manufacturers and producers in this country may know what the American market requires, the Bureau of Foreign and Domestic Commerce has had a staff, at times as many as thirty employees, tabulating the statistical data in the greatest possible detail from 1913 invoices of imports of all kinds of chemicals other than dyestuffs. This was a task for a chemist as well as a statistician, and

although the results have not yet been published the work has proceeded on sound statistical lines as well as on a sound technical foundation. This is commercial statistical work of a practical nature for the national benefit of industry, which I doubt if any foreign country has ever equalled.

When the United States entered the war a heavy demand for statistical information was made on the Bureau of Foreign and Domestic Commerce, and that demand on the whole has increased rather than diminished. The main call for information has been from the government offices. Trade statistics became of moment to the War Department and the Navy Department. They were the backbone of the work of the War Trade Board, the Shipping Board, and most essential for the work of the Food Administration, the War Industries Board, the Fuel Administration, and other government offices. It became necessary to analyse trade channels, trade regions, the tonnage movements between the United States and foreign countries, the trade in individual commodities, and the trade of individual ports, and the trade as a seasonal phenomenon. It became necessary to go back over the trade for a number of years, to make compilations by months, by ports, by countries, and by commodities, that had never been made before. It became necessary to have current reports on the trade at shorter intervals than the customary period of one month, and to speed up the transmission of returns from all the customhouses, speed up the work of compilation, and speed up the final transmission of the statistical data to the war boards in Washington. The Bureau of Foreign and Domestic Commerce and the Treasury officials for a time wrestled with these problems without new means of carrying them to perfection. Some of the war-time organizations were being delayed and interfered with in their work, although I believe practically every one who had the opportunity for calm judgment as to the way the Treasury and Commerce Departments were proceeding with their available resources gave them credit for what they were accomplishing.

It was in midwinter, 1917-1918, when the true realization of the importance of a statistical basis for the export and import embargoes and tonnage conservation was first arrived at.

It was at that time that the difficulties under the old normal scheme of getting statistical returns came to a head. There were committee meetings in Washington at which the war boards told what their needs were. The Treasury Department and the Department of Commerce were freely criticised. Some of the enthusiastic statisticians in the war boards were for taking over *in toto* the work of compiling the trade statistics, and making it a war matter. These statisticians were overlooking the legal basis and *raison d'être* for the publication of the statistics—were overlooking the demands of Congress, the demands of the business men, and the most intimate connection of the trade statistical work, as an integral part, with the whole mechanism of trade information of the Department of Commerce.

Cooler judgment finally prevailed in the meetings of the committees, the requirements of the war boards were definitely formulated, and the Treasury Department and the Department of Commerce pledged themselves to do everything possible to meet these demands. The war boards coöperated in a request to the President for an emergency appropriation for additional clerical and other assistance and the work was soon under way. The chief demand of the war boards was that they should receive statistical returns of trade for ten-day periods, instead of periods of one month. The returns have been made on that basis, I think to the satisfaction of the Shipping Board and the War Trade Board and the Food Administration, the offices chiefly concerned. These various boards of course required their own statistical divisions to work up the basic materials into the combinations which were required for their special purposes. The War Trade Board got together a very large statistical organization for tabulating export license returns and making the comparison between license returns and export figures. The ten-day reports placed a strain on the customs service, and credit is due to the customs organization for the untiring efforts and intelligent direction of machine tabulation and other helps to rapid compliance with the requests of the war boards. The ten-day reports have been kept confidential and no publicity is given to the returns on that short-time basis.

I have referred to the intimate connection of the official trade statistics with the trade information work of the Bureau of Foreign and Domestic Commerce. The effects of war restrictions have brought about an unprecedented interest in foreign trade statistics on the part of our manufacturers. The demands for statistical information have been steadily increasing. As an import embargo has been placed on a certain commodity, or as ship space to a certain foreign market has become progressively restricted, the manufacturers have been forced to take an interest in possible substitute materials and possible substitute markets. The Bureau of Foreign and Domestic Commerce is called on to advise the manufacturers on all these points, and the Bureau is also required to supply in this connection foreign trade information with reference to foreign countries that is sent in by commercial attachés, trade commissioners and special agents of the Department of Commerce, and consular officers.

There is another side to this question in addition to the export and import and tonnage statistics officially collected by the United States Government. The Bureau of Foreign and Domestic Commerce is probably the leading center in this country for statistical information, general economic information, and market reports, with reference to foreign countries. In 1909 the Bureau for the first and last time issued a statistical abstract for foreign countries. Since that year the Bureau has not had appropriations which would enable the continuance of that publication, but has none the less continued to do what work has been done by our government on the official statistics of trade of foreign countries. In addition to the statistics of imports and exports which are required by law at our customhouses in this country, we receive official reports of the values of merchandise for which consular invoices are executed by our consuls in foreign countries. These reports are published in *Commerce Reports* and in the special *Supplements to Commerce Reports*, and have always been of interest to close students of statistics of trade with particular sections of foreign countries. Although the Bureau of Foreign and Domestic Commerce has not been able to continue the statistical abstract of foreign countries it has con-

tinued a section on the statistics of the principal countries in the Statistical Abstract of the United States. That section, though very brief, has become a well-recognized source of ready reference material on the commercial and financial statistics of other countries. The official statistics of all foreign countries and colonies are currently received in the Bureau of Foreign and Domestic Commerce and are in constant use there.

Again, compilation in Washington of these statistics of foreign countries has been largely of an utilitarian nature. American manufacturers have wanted to know where given foreign countries purchased their supplies or disposed of their manufactured products, and have called on the Bureau for special statement work of this nature involving compilation from the statistics of foreign countries. The reports of the United States consuls, of commercial attaches, special agents, and trade commissioners on foreign countries have been amplified by a statistical analysis of the foreign markets which they cover. During the war, when minute surveys of the trade of foreign countries have been necessary, this class of work has been done on a larger scale than before.

The special statement work on foreign statistics of necessity had to be limited, as does the special statement work on statistics of the United States, and so far as compilations for commercial organization are concerned, the Bureau has coöperated by making the statistical publications available and supervising the work of outside compilers. Congress and most of the executive departments in Washington have for years looked to the Bureau of Foreign and Domestic Commerce as the center for statistical information on commercial matters of all kinds relating to foreign countries, as well as to the United States. There has been this demand for statistical analysis of certain questions to meet the wishes of the Ways and Means Committee and the other important committees of Congress having to do with commercial questions. Here again there was an unprecedented demand brought on by the war. The War Department and the Navy Department have been deeply interested in the statistics of sources of supply of raw materials of war importance, and facts

concerning the market conditions, accessibility, etc. With reference to all foreign countries such information was available in the Bureau of Foreign and Domestic Commerce and demands have been made on the Department to work up the material for the purposes indicated. The staff of the Bureau was not sufficient to meet the increased demands by the war-time organizations, by Congress, and by the business men, so there has been further increase of staff.

The Latin-American Division of the Bureau of Foreign and Domestic Commerce probably has more information with reference to commercial matters in Latin-America than any other one office in the world. This information has been of untold value to the various war organizations. The Bureau has made statistical studies of the foreign trade of Germany and Austria-Hungary, country by country, and article by article. The Bureau has published statistics of the commerce of Germany and Russia, in connection with a study of the commercial treaty status of the two countries, which have proved most illuminating. The Bureau has recently published statistics with reference to the sources of supply and consumption of the principal industrial raw materials and foodstuffs, in connection with a summary report on tendencies in economic reconstruction. Statistical studies of the trade of the principal countries of the world by countries and articles are now under way in the Bureau, and will unquestionably prove of value in forthcoming studies of international relations, as well as providing an index for American manufacturers in sizing up foreign markets for their goods and foreign sources of supply for their raw material. These statistics of foreign countries are chiefly being utilized for these basic purposes, although certain specific trade studies,—such as the study of the exports of cotton goods from every producing country and the imports of cotton goods in every consuming country,—are being made. If it is important that Congress and our treaty makers should know the courses of trade, it is none the less important that our merchants and manufacturers should have the information available.

There is one other aspect of the statistical work of the Bureau of Foreign and Domestic Commerce which has only incident-

ally been touched—I refer to the Statistical Abstract of the United States. The Statistical Abstract of the United States is in the main made up of statistics of trade and industry. The biggest single contribution to the subject matter is the statistics of imports and exports of the United States and the carrying trade of the United States. There is a good deal of other statistical matter included bearing on commerce which is kept currently up to date in the Bureau of Foreign and Domestic Commerce although original compilation is done by trade organizations, or commercial companies, trade papers, or other unofficial sources. The statistical record of progress of the United States from 1800 to date published in the *Statistical Abstract* is kept up currently by the Bureau of Foreign and Domestic Commerce. To meet wartime requests this section and the foreign-country tables have been brought up to the latest date possible and issued separately. Probably the *Statistical Abstract* more than any other one publication has made the Bureau known as a central information office on all phases of commercial and industrial statistics. The *Abstract* answers a multitude of inquiries, and relieves the other government offices of a considerable volume of correspondence. Of course the Bureau of Foreign and Domestic Commerce makes no effort to answer inquiries that should properly be handled by the Bureau of the Census or the Postmaster-General, or the Bureau of Mines, and the other government offices. The *Statistical Abstract* does contain much of the trade information which has been required by the war-time organizations and business men since the outbreak of the war, but with the exception of the information with reference to the effects and results of the first selective draft, the *Abstract* itself shows little change as a result of the war.

I am not a technical statistician, and am not primarily interested in the theory of statistics or in the highly technical aspects of methods of statistical presentation. As a trade investigator and writer on commercial subjects and as a minor official of the federal government I have used trade statistics many years. Recently I have had administrative oversight of the work of compilation of the trade statistics of the United States. The whole work of the Bureau of Foreign and Domestic Com-

merce is built up around the statistical work. It is my opinion, based on my experience in that work, that the Bureau of Foreign and Domestic Commerce would lose vastly in its efficiency if it did not handle the actual compilation of the trade statistics of the United States. The conclusions reached by some of the committees of administrative officers and statisticians have been that this subject of trade statistics of the United States is simply one phase of trade information and that it should be regarded as such and entrusted to the office which is given by law the position of central information office for trade information, that is the Bureau of Foreign and Domestic Commerce. So long as our statistics are to be regarded from a practical standpoint, I feel that there is the best of reason for having actual compilation done by the offices that are primarily concerned with the subject matter. As the Bureau of Mines and the Geological Survey and the Department of Agriculture would suffer in efficiency by the transfer of their statistical work away from them to a central bureau of statistics, so would the Bureau of Foreign and Domestic Commerce suffer from the transfer of the trade statistics to any such central bureau. The question of a central bureau of statistics has been urged time and again, and was brought up in Washington acutely in connection with the war demands. Since September 1 of this year there has existed a Central Bureau of Planning and Statistics, but, I think fortunately, that Bureau has been organized with the recognition of the value of compilation in the offices primarily concerned with the subject matter, and has acted simply as a clearing house for information and means of eliminating duplication.

The war has placed a very severe test on the efficiency of our official mechanism of tabulating and compiling statistics, both of the United States and of foreign countries. We have had a great amount of ground to cover, and undoubtedly we have not covered it so well as it would have been possible to cover it, with unlimited funds and resources and perfected organization. To meet the strain of war requirements radical changes have been necessary; many of the formerly accepted traditions of official trade statistics have been abandoned; the

impetus and enthusiasm, the war needs, and the greatly increased use of official statistics by statisticians, economists, government officials, and business men, have all contributed to progress in methods, and improvement in performance which would have been slow in forcing their way through if the old routine had not been upset by war. On the whole, however, I feel that there is no need for apology on the part of any of the government offices concerned.